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AN INTERPRETATION OF RESEARCH IN READING READINESS.

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THE RESULTS OF 17 STUDIES ON READING READINESS ARE SUMMARIZED AND INTERPRETED. ALL BUT ONE OF THE STUDIES WERE COMPLETED SINCE 1957. READING READINESS IS DEFINED, AND THE DIFFERENCES BETWEEN TRADITIONAL AND CURRENT THEORY ARE DISCUSSED. STUDIES OF FORMAL READING READINESS INSTRUCTION IN KINDERGARTEN ARE DESCRIBED. CONCLUSIONS ABOUT KINDS OF READING READINESS EXPERIENCES, TESTS, STUDIES, AND THE AGE WHEN CHILDREN BEGIN READING READINESS AND READING INSTRUCTION ARE DRAWN FROM THE REPORTED RESEARCH. IMPLICATIONS FOR FURTHER RESEARCH ARE INCLUDED. REFERENCES ARE GIVEN. THIS ARTICLE IS PUBLISHED IN "ELEMENTARY ENGLISH," VOLUME 43, APRIL 1966. (LS)

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An Interpretation of Research in Reading Readiness

We hear frequently enough these days the logical statement about the old phonics discussion: it is not a question of phonics or no phonics, but rather a question of which phonics, when, and how much. I would suggest that our current interest in early reading instruction also can not be resolved on an either/or basis; here the questions more likely are what kind of instruction and for whom.

Whether we prefer the title "reading readiness," "early reading instruction," or "kindergarten readiness," the topic is broad and difficult to delimit. On one hand we have educators such as Hymes and Sheldon saying "Touch not the little children"; at the other extreme we find O. K. Moore beating two and three year olds with typewriters (or is it vice versa?); in another direction, Fry, Mazurkiewitz, and Downing are mutilating orthography while their opposites mutilate meaning in the name of linguistics.

Reading Readiness Defined

The present discussion will stay within the more narrow confines of the research in what we call "reading readiness" or "early reading instruction."

"Reading readiness" has been defined directly and by implication in many ways. Generally speaking, it represents progress in two areas of living: the one area is time —time for growth and development; the second is experience or training.

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The element of time is reflected in such concepts as social or emotional maturity, mental age, physical maturity, and the like. These influences of the child development specialists are the predominant factors in most traditional kindergarten programs and lead to an emphasis on identification procedures as opposed to teaching methods or materials.

The second facet of reading readiness—experience—ranges the entire gamut from a continuation of general preschool experiences to "fussing with phonics." Traditional programs in this area are developed more from logic than from research and usually lead children from concrete experiences, through verbalizing about these experiences, to gross auditory and visual discrimination activities—either in kindergarten or early in first grade. Efforts of educators who focus on this factor of experience as opposed to the time factor reveal less concern with identification and more concern with the kinds of experiences and skills children need in order to be able to read. In such cases, "time" for adequate growth and maturity is assumed.

Whether a given school emphasizes the time or the experience factor, reading readiness may be judged successful or not in terms of the eventual success or lack of success of pupils in reading.

We live in an exciting age today as we appraise kindergarten and early first grade in terms of readiness and reading. Research today seems to deal more with skills and their placement—the experience factor—

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than it does with identification. In part this focus may be the tenor of the times, but in part it results from findings which negate traditional criteria.

Traditional Views Questioned

The mental age criterion for beginning reading instruction is an example of the traditional "time" oriented identification procedure. Investigations of this topic cluster around the 1930's and are exemplified by the Morphett and Washburne study (11). It is doubtful that their study would stand up today in the more stringent "court of research." Even if we accept the study, we must still recognize that, in thirty-five years, materials, methods, and the experiences of children have changed considerably. Schramm (17), for example, reported that children who view television begin school with vocabularies about a grade higher than children who do not.

More specifically to the point, Anderson (1) compared 443 kindergarteners in an effort to determine the mental age necessary for them to use oral context and letter-sound associations in unlocking a strange word. Analysis of variance of mean gain indicated that the group with mental ages ranging from 52 to 65 months gained as much as the group with mental ages ranging from 79 to 91 months. There are a number of other studies reporting that correlations between mental age or intelligence and beginning reading or reading achievement range as low as .00.

Another aspect of the identification approach that has fallen into disrepute is the use of reading readiness tests. Regardless of tests used, correlations between readiness tests and reading achievement usually range around .40. For example, Karlin (8) reported a correlation of .36 between the Metropolitan Readiness Test administered in September of first grade and Gates Primary Reading Test at the end of first grade. Bremer (3) tested readiness in grade one and reading achievement at the beginning of grade two. He found a correlation of .40 between the two tests. While 31 percent of his subjects who scored in the lowest third in readiness scored in the lowest quartile in reading, another 31 percent who were in the lowest third in readiness scored *above* the mean in reading achievement. His conclusion was that the tests might be used for diagnosis, but not for prediction.

Still another facet of the "give them time" view of early reading instruction is the concern for visual maturity. While this concern is not founded on research, it has been spoken to by Thomas Eames (5). In reporting on the vision of five year olds he examined, he stated that the poorest in near visual acuity was quite capable of reading the usual texts. Furthermore, he pointed out that children of this age have more accommodative power than at any subsequent age.

Research Emphasis Today

Current research seems concerned mostly with content, methods, and chronological age for beginning reading instruction. The crucial questions revolve around two related points: what kind of prereading instruction is most effective, and when should formal instruction begin? The research evidence may seem contradictory in respect to this double questio. but I believe a pattern is apparent.

A large number of studies have been conducted at Boston University under Durrell to isolate abilities related to success in early reading instruction. In one of these studies, Nicholson (13) tested 2,188 first graders after three weeks of school. Using the Boston University Letter Knowledge Tests, she tested pupils' ability to match lower case and capital letters prior to the teaching of those letters. Mean scores of 25.34 in matching capitals and 24.48 in

matching lower-case letters suggested to her that the gross discrimination activities —distinguishing non-word forms—in traditional readiness programs are a "waste of time."

Following 1,172 of these pupils through February in first grade, Olson (14) found that knowledge of letter names and ability to write letters correlated .55 with reading achievement in February. In an unrelated study, McHugh (10) verified this relationship between knowledge of letter names and reading achievement. He found that the Boston University Letter Knowledge Tests correlated more highly with reading achievement at the end of grade one than did the Metropolitan Readiness Test. In fact, knowledge of either capital or lower-case letter names correlated more highly with reading than did the best subtest of the Metropolitan.

Lest we get the wrong idea from these studies, Linehan (9) compared the june reading achievement of 314 children who had preliminary teaching of letter names and sounds with 300 children who had not. Both groups used the same basal reading program. There was no significant difference in reading achievement at the end of the year.

While the Boston studies suggest a relationship between knowledge of letter names and achievement in reading, we cannot assume that the relationship is causal. In fact, Muehl (12) reported quite the contrary. Eighty-seven kindergarten children were assigned alternately to relevant and irrelevant groups. In each case both groups were taught to associate a group of letters as a "word" for each of three pictures. Then the relevant group was taught letter names for the letters used in the "words" while the irrelevant group was taught letter names for the same number of irrelevant letters. Muehl found a significant difference in score on the "words" in favor of the irrelevant group and concluded, from observation as well as from the data, that acquisition of letter names interferes with subsequent performance in learning words by a sight approach.

Are these studies contradictory? We recognize that only nine of our twenty-one consonants have names that begin with the sound these letters usually represent. As a result, some of the letter names could interfere with the sound association we try to develop. On the other hand, would Muehl's results have been different if, instead of the sight approach, letter-sound associations had been used in learning the "words?" A possible conclusion from these studies is that knowledge of letter names prior to teaching is a predictor of reading success not because it contributes directly to reading skill and must be taught, but because it reveals a combination of experience and ability in the child—experience or exposure to the printed form and ability to profit from or to retain that experience.

Formal Instruction in Kindergarten

Studies of formal programs in kindergarten and of the use of workbooks for reading readiness instruction appear to be even more contradictory. I'd like briefly to review six studies and then attempt to describe a pattern.

Blakely and Shadle (2) compared two approaches to reading readiness in kindergarten. With the same teacher, a morning section used *We Read Pictures* while an afternoon section followed a program which "grew out of children's interests." The Metropolitan Readiness Test and a Maturity Check List were used as pre- and post-tests. The test for *We Read Pictures* was also used at the conclusion of the study. These investigators concluded that girls do as well under either approach, but boys gained more following the informal

program. The investigators reported teacher bias in favor of the informal approach, but several other points are important here. First, were the two approaches really different in content or only in degree of formality? Second, is the success of a reading readiness program best measured by success in readiness or in reading?

Ploghoft (16) reported a similar study with one teacher. He also used the Metropolitan Readiness Test as a criterion of success and reported no significant difference in the two approaches. The workbook, used for only nine weeks, was not named in this study.

A large scale study of reading readiness in kindergarten is still underway in Denver. Brzeinski (4) randomly assigned 122 kindergarten classes into what eventually became four treatment groups in first grade. Using a preliminary version of the McKee-Harrison *Getting Ready to Read*, he found significant differences in comparing the groups on the Gates Reading Tests. The formal program in kindergarten followed by a first-grade program adjusted for the skills taught was significantly better than any of the other three groups.

Hillerich (7), in a five-year study still underway, reported on several aspects of the *Getting Ready to Read* program in kindergarten. He compared a first-grade group of 363 children who had the formal readiness program in kindergarten with 449 who had not. Both groups had the same reading program in first grade. While the experimental group was significantly lower in aptitude on the Stroud-Hieronymous Primary Reading Profiles, they were significantly higher in reading achievement at the end of the year.

In another aspect of the same study, he evaluated the effectiveness of readiness workbooks in kindergarten. Based on teacher preference, ten sections of kindergarten pupils used the workbook with the program, while twelve sections were taught the same skills program through activities and other materials. At the end of kindergarten, mean scores on the Pre-Reading Inventory of Skills Basic to Beginning Reading indicated a significant difference in favor of the workbook group. At the end of first grade a significant difference in reading achievement between the two groups also favored the workbook group.

In addition to use of the Pre-Reading Inventory at the end of kindergarten, it was also administered at the beginning of first grade in an effort to check the amount of forgetting over the summer. There was a mean loss of 2.6 points on the 58-item test.

A recent study in California was reported very briefly in the *Phi Delta Kappan* (15). While little information was given, indications are that 1,180 first- and second-grade pupils were compared in three treatment groups. Reports indicated that those who were taught reading in kindergarten were better readers than those who had reading readiness in kindergarten, and the latter were better readers than those who had "typical" kindergarten instruction.

We have seen a good deal of the evidence thus far, including some studies favoring workbooks and some opposing workbooks, some favoring a formal program in kindergarten and some favoring an experience approach. I would like to examine one more study because it seems to contain many of the elements which lead to this confusion of results.

Fry (6) investigated the value of reading-readiness materials in first grade. He randomly assigned eight first grades as "readiness" and "non-readiness" treatment groups. He found no significant difference between the groups on a pretest using the Metropolitan Readiness Test. The readiness group used *Before We Read* and "some" went on to use *We Read Pictures* and *We*

Read More Pictures—before entering the Scott, Foresman pre-primers. The non-readiness group began immediately in first grade with the Allyn and Bacon pre-primers. In mid-December both groups were tested with a 24-item Instant-Word recognition test. Results indicated that the non-readiness group's score of 12.0 was significantly higher than the readiness group's score of 10.2. A correlation of .56 was reported between the Metropolitan Readiness Test and the Instant-Word test. In conclusion, Fry questioned the value of reading readiness instruction and of reading readiness tests.

Some Conclusions

I will depart now from the business of reporting results and enter the subjective area of concluding from these results.

First of all, since there obviously are many kinds of "reading readiness" experiences, what kinds are most helpful for success in reading? Of the representative studies examined, the programs that contribute to success are of two kinds: an experience approach appears better than a workbook approach when the latter involves interpreting pictures and/or gross kinds of discrimination; a program designed to teach the use of context and consonant-letter-sound associations seems better than an experience approach, and the use of a workbook with this kind of program was the most effective. The studies consistently separate in terms of this difference in readiness content. This division suggests to me that the traditional experience approach and the general kind of readiness workbook are teaching relatively the same thing. Neither develops specific skills, but the experience approach has the advantage of spontaneity and enthusiasm.

We might follow this conclusion with a little logic: since reading involves the discrimination of printed letters, the use of context, and the use of sounds of words, some teaching of these elements ought to be part of any prereading program. (I should hasten to add, when I talk about letters and sounds, I do not refer to a synthetic, sounding-out kind of phonics; we know the research in that area.)

A second point from these studies relates to the tests used. If reading readiness is viewed as a collection of skills or abilities, general readiness tests will not measure these skills. While a number of the studies reported did use readiness tests, the low correlation between these tests and reading achievement makes their use questionable. Furthermore, the true test of any reading readiness program lies in its contribution to success in reading. One might even speculate here that general readiness tests and general readiness programs are a circular process wherein each has helped to perpetuate the other.

Third, in any study in education there are always enough uncontrolled variables without introducing more. If readiness programs are being compared, the reading program following the readiness treatments ought to be the same for the treatment groups. For example, Fry was comparing groups on the effectiveness of reading readiness as opposed to no reading readiness. Yet, another variable was the use of two different reading programs with these groups.

Fourth, there seems little doubt that kindergarten children can master specific prereading skills. Anderson and Brzeinski found this to be true. Hillerich reported mastery (as measured by the Pre-Reading Inventory) by 70 percent of the kindergarten children the first year and by 83 percent the second year when workbooks were used by all children.

Finally, and by far the most important similarity in these studies, the age at which children *begin* instruction in reading seems

to be a significant factor. In Fry's study, for example, the readiness work itself—or the differences in reading programs—is probably not nearly so significant as the factor of practice. At the mid-December testing, all but three of twelve readiness groups were still in pre-primers while ten of twelve non-readiness groups were already in primers.

By the same token, part of the success of the Denver and Glenview studies undoubtedly relates to this earlier start in reading instruction. In the Glenview study, children who had the readiness program in kindergarten began reading sooner in first grade and also read many more library books during the year. Once the initial skill is developed, we must recognize that children also learn to read by reading.

Some guidelines for future research are apparent from these studies. Selection of tests ought to be made in terms of what is being measured: one cannnot truly evaluate the success of a readiness program with a general readiness test, nor does a word recognition test adequately measure reading achievement. Care must also be taken to control such obvious variables as the type of reading program which follows a camparison of readiness treatments. The reported differences in the success of various approaches to readiness also points up the importance of specifying the programs being compared in any study; failure to state the program used makes a research study worthless to the reader.

More longitudinal studies such as those in Denver and in Glenview are needed to investigate other programs. Are these two programs successful merely because of a running start—as many synthetic phonic programs seem to be—or will youngsters continue to progress more rapidly in reading as they advance in the grades? Success is not a short-term affair, but perhaps neither is failure. Would some of the other studies which showed no significant differences at the end of kindergarten have produced different results on a long-term basis?

Finally, comparisons of research suggest that many current arguments about early reading instruction would be deflated if we were more careful about two points. First, we cannot debate in terms of workbooks or no workbooks, readiness or no readiness, and so on. There are different kinds of these things and we need to be more specific. Secondly, in most professional articles on the subject of early reading instruction, one can tell by the dates in the bibliography whether the writer is arguing for or against formal instruction in the kindergarten. We will make little progress if we continue to pit the past against the present.

Although the issues are not resolved, we have made great strides in recent years. We can look forward to a battery of reports on early reading instruction soon, as the U. S. Office of Education beginning-reading projects are completed. Reading readiness is becoming less nebulous as we identify certain prereading skills which lead to success in reading. The old taboos are being broken down as we learn more about early reading. Yes, we live in an exciting age; youngsters today and tomorrow will reap the benefits.

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(Continued on page 372)

ment tests (no standardized data); part group, part individual; conveniently packaged.

Gates-McKillop—About sixty to ninety minutes; several helpful checklists.

Diagnostic—About forty-five minutes; comprehension passages per graded step may be insufficient to yield all reading levels desired; helpful profile.

There is probably no substitute for a well-trained reading specialist in analyzing a reading disability. Since such specialists are not always an accepted school budget figure in liberal numbers, many teachers, supervisors, and administrators find themselves looking for an effective way to diagnose some of their reading problems. Tests such as these mentioned in this article may be of considerable use to them. Classroom teachers in my college classes say the second administration will begin to show a growth in ease and skill, if not sophistication, with the examinations.

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